Chapter 13

13. Step Through a Typical Mission

The purpose of this chapter is to walk through the steps of a typical mission, starting when you leave home for mission base and ending when you arrive back home after the mission. Consider it a "mission flow" checklist and discussion.

OBJECTIVES:

1. Discuss the items you should check before leaving on a mission: (O & P; 13.1}
   a. Personal and aircraft items.
   b. CAPF 71.
   c. State the crew duty limitations (per the current CAPR 60-1).
   d. State the three unique entries made by a CAP pilot on an FAA Flight Plan and where they go on the plan.
   e. Flight release.
2. Discuss your actions upon arrival at mission base, including the general briefing. (O & P; 13.2 & 13.4}
3. Discuss the six steps of ORM and the four principles involved. {O & P; 13.3}
4. Discuss the aircrew briefing. (O & P; 13.5}
5. Describe the information contained in and how to fill out the front of the CAPF 104. (O & P; 13.6}
6. Discuss the items checked and actions taken before leaving on a sortie: (O & P; 13.7}
   a. Equipment and supplies check.
   b. Pilot's briefing.
7. Discuss duties during the sortie, including: (O & P; 13.8}
   a. Discuss the "sterile cockpit" rules and when they apply.
   b. Preparations prior to entering the search area.
   c. Required radio reports.
8. Discuss your actions upon arrival back at mission base. (O & P; 13.9}
9. Discuss the aircrew debriefing. (O & P; 13.10}
10. Describe the information contained in and how to fill out the back of the CAPF 104. (O & P; 13.11}
11. Discuss your actions upon arrival back home, including: (O & P; 13.12}
    a. What to do with the aircraft.
    b. What to do if you observe signs of post-traumatic stress.
    c. When the mission is officially over for you and your crew.

13.1 Leaving Home Base for Mission Base

What's the Rush?

Why do we go to so much trouble to train mission aircrew members and encourage members to spend the time it takes to stay proficient? The primary reason is that *time is such a critical factor* in missing person or aircraft crash searches. You must treat every minute after you been alerted as critical to the survival chances of the victims.

Some statistics concerning aircraft crashes are informative (all percentages are approximate and times are average). Of the 29% who survive a crash, 81% will die if not located within 24 hours after the crash (94% within 48 hours). Of the 40% uninjured, 50% will die if not located within 24 hours after the crash; survival chances diminish rapidly after 72 hours. So, the time factor is a critical element in SAR.

The average time it takes for family, friends or authorities to notify AFRCC of a missing or overdue aircraft varies widely. If the pilot did not file any flight plan it averages 15.6 hours until AFRCC notification; if a VFR flight plan was filed the time goes down to 3.9 hours; its 1.1 hours if an IFR flight plan was filed. Next AFRCC has to notify CAP and CAP has to activate its resources and begin the search.

The average time from the aircraft's being reported missing to actually locating and recovering the victims are: 62.6 hours if no flight plan was filed; 18.2 hours with a VFR flight plan; and 11.5 hours with an IFR flight plan. [Remember these are average times, so 50% of the response times are faster while the other half is slower.]

What do all these statistics tell us? They tell us to *take each mission seriously,* and that we should *strive to do everything better, smarter, and faster!* Training, practice, and pre-planning help us accomplish these goals. [They also tell pilots to always file a flight plan!]

You should have a mission "ready" bag containing all your essential mission equipment. Inventory and re-stock it after each mission.

The urgency of events, coupled with a hasty call-out, may leave you and other crewmembers feeling rushed as you prepare to leave for a mission. This is where a good pre-mission checklist comes in handy. As a minimum, the crew should check for the following:

- Proper flight uniforms, and enough spare clothes for the duration.
- Required credentials (the PIC is responsible for certifying the eligibility of any proposed passenger to the FRO prior to obtaining a flight release).
- Current charts for the entire trip (gridded, if you have them). Note: It is a good idea to keep gridded sectionals in the aircraft. These sectionals should cover the areas you normally search, and should be labeled if they are not current (e.g., "Obsolete - For Training Purposes Only").
- Sufficient money for the trip (e.g., credit cards and some cash; it's a good idea to keep a $50 or $100 traveler's check in you kit, as some FBOs don't take credit cards especially late at night). Also, change for drink and food machines is good to have.
- Equipment such as flashlights and a camera (including spare batteries).

- Crew duty limitations (refer to CAPR 60-1, Chapter 2).

Check the aircraft. In addition to a thorough pre-flight you could perform an inspection per CAPF 71, *CAP Aircraft Inspection Checklist*. This checklist is used by the Safety Officer to determine the overall condition of the aircraft and to ensure that it complies with FAA and CAP regulations and directives. Now is the time to discover a discrepancy, not when you have flown 500 miles to mission base only to find that your aircraft won't be allowed to fly on the mission (or worse, the Safety Officer asks you "How do you intend to get home?").

Also check:

- Weight & Balance.
- Fuel assumptions (e.g., fuel burn, winds, power setting, and distance).
- Tie-downs and chocks.
- Survival kit.
- Cleaning supplies.
- Fuel tester with screwdriver heads.

Check the weather and file your FAA Flight Plan. An FAA Flight Plan shall be filed for all for cross-country flights of more than 50 nm, except those flights where a CAPF 84 or 104 is required. [Note: Even for cross-country flights covered by a CAPF 84 or 104 its good practice to file an FAA flight plan and use flight following whenever possible.] Figure 13-1 shows information particular to CAP (look at #2 and #11).

Form Approved OMB NO. 2120-0026

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION **FLIGHT PLAN**	(FAA USE ONLY) ☐ PILOT ☐ VNR ☐ STOPOVER		TIME STARTED	SPECIALIST INITIALS

1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE/ SPECIAL EQUIPMENT	4. TRUE AIRSPEED	5. DEPARTURE POINT	6. DEPARTURE TIME		7. CRUISING ALTITUDE
☐ VFR ☐ IFR ☐ DVFR	CPF 4239		KTS		PROPOSED (Z)	ACTUAL (Z)	

8. ROUTE OF FLIGHT

9. DESTINATION (Name of airport and city)	10. EST. TIME ENROUTE		11. REMARKS N99545, CAP Flight 4239
	HOURS	MINUTES	

12. FUEL ON BOARD		13. ALTERNATE AIRPORT(S)	14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE	15. NUMBER ABOARD
HOURS	MINUTES			
			17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)	

16. COLOR OF AIRCRAFT	CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.

FAA Form 7233-1 (8-82) CLOSE VFR FLIGHT PLAN WITH _____FSS ON ARRIVAL

Figure 13-1

Also fill out your "Inbound" CAPF 104 (covered later). The PIC will then get a release from a Flight Release Officer (FRO); leave a copy of the front of the form where the FRO can get to it, if necessary.

Brief the crew, paying particular attention to fuel management and refueling stops, special use airspaces, FDC NOTAMS, and destination airport(s) airspace and runway/taxiway layout.

13.2 Arrival at Mission Base

Once you arrive at mission base and taxi to parking, secure the aircraft (i.e., tie-downs, chocks, avionics/gust lock, doors and baggage door locked, pitot and cowl covers, parking brake off) and arrange for refueling. Clean the aircraft, particularly the windows. A Safety Officer may meet you to perform her inspection (CAPF 71); if so, get a copy for your records.

Next you must close your FAA Flight Plan and call your FRO to tell him you've arrived safely. Then you present your credentials and sign into the mission; make sure that you sign in personally, and that the aircraft is signed in as well. Complete and turn in your 'Inbound' CAPF 104 (keep a copy).

The mission staff will probably show you around mission base and inform you of transportation, lodging and meal arrangements. They will also tell you when to report for duty, normally by telling you when the general briefing will be held.

13.3 Operational Risk Management Overview

Operational Risk Management (ORM) is a practical way to accomplish the mission with the least possible risk. It is more than just common sense (although plain common sense is very important) and more than just a safety program. It can be used to identify and assess anything that might have a negative impact on a mission.

ORM is a method of getting the job done by identifying the areas that present the highest risk, then taking action to eliminate, reduce or control the risks. It can be very flexible and can take from a few seconds to a few hours or days.

ORM cannot be mandated, but it must become a part of the CAP culture. We in CAP are willing to take educated (informed) risks, but we do not like to gamble. Therefore ORM should be embraced both by individual members and mission planners and supervisors.

The Air Force uses a six-step "building block" approach:

1. Identify the hazards.
2. Assess the risks.
3. Analyze risk control measures.
4. Make control decisions.
5. Implement risk controls.
6. Supervise and review.

13.3.1 ORM Principles

Accept no unnecessary risks. Unnecessary risk comes without a commensurate return in terms of real benefits or available opportunities. All CAP missions and our daily routines involve risk. The most logical choices for accomplishing a mission are those that meet all mission requirements with the minimum acceptable risk.

Make risk decisions at the appropriate level. Making risk decisions at the appropriate level establishes clear accountability. Those accountable for the success or failure of the mission *must* be included in the risk decision process. The appropriate level for risk decisions is the one that can allocate the resources to reduce the risk or eliminate the hazard and implement controls. Levels include

the incident commander, aircraft or mission commander, ground team leader, or individual responsible for executing the mission or task.

Accept risk when the benefits outweigh the costs. All identified benefits should be compared to all identified costs. The process of weighing risks against opportunities and benefits helps to maximize unit capability. Even high-risk endeavors may be undertaken when there is clear knowledge that the sum of the benefits exceeds the sum of the costs. Balancing costs and benefits may be a subjective process and open to interpretation. Ultimately, the balance may have to be determined by the appropriate decision authority.

Integrate ORM into CAP practices, procedures and planning at all levels. Risks are more easily assessed and managed in the planning stages of an operation (this includes planning for a sortie). Integrating risk management into planning as early as possible provides the decision maker the greatest opportunity to apply ORM principles. Additionally, feedback (lessons learned) must be provided to benefit future missions/activities.

13.3.2 ORM and the Aircrew

There are many aspects of a typical mission or sortie (training or actual) that contain risks, and the aircrew needs to acknowledge those risks in order to eliminate or mitigate them. As you move through the steps of a typical mission, take time to look for the risks involved and think about the regulations, practices and procedures that CAP has in place to eliminate or reduce the risks.

Each CAP member is responsible to look for risks: at the local headquarters, in vehicles and aircraft used for CAP missions and activities, on flight lines, and at mission base. If you see a risk, don't ignore it! Take steps to eliminate or reduce the risks, and bring the risk (and your actions) to the attention of the person responsible.

The Pilot-in-Command has the ultimate authority and responsibility to deal with risks during flight operations. With this comes the responsibility to inform his or her crew of the risks involved in each flight, and to listen to and address crewmember's concerns about risks.

A powerful tool used to eliminate or reduce risks during a sortie is Crew Resource Management, discussed in Chapter 14. Also, an ORM Matrix (Attachment 2) can be used to determine levels of risks.

13.4 General Briefing

The urgency of events, especially at the beginning of a SAR mission, may lead to a sense of confusion about the process. There is a lot of person-to-person talk, and two-way radio chatter adds to the din. But instead of confusion, what you hear is everyone trying to “get the picture” - get the information they need to do their jobs in a short amount of time. It is a deliberate process.

Soon after sufficient data have been assembled, and the mission base is functioning, there will be a general mission briefing that everyone should attend. The incident commander summarizes the situation, including a description of the search objective. The general briefing will include a special emphasis on safety. A map will probably be displayed, and the areas to be searched (or the object or area to be assessed) will be outlined on the map.

You will be told the current weather conditions and what is expected to develop later in the day. For scanners and observers, the current and predicted visibility is especially important.

The general briefing gives mission personnel the overall situation at the moment. There will be other briefings as the mission continues. Between briefings however, crewmembers can update themselves by checking information that is posted for all to see and which is updated as needed.

You may be handed a sortie packet at this time, or the Briefing Officer may make assignments individually.

13.5 Aircrew Briefing

A detailed briefing will be given to each aircrew (and ground team) prior to each sortie. This will include areas to be covered, type of mission, altitudes, search patterns, communications frequencies and procedures, actions to be taken, hazards to operations, weather, and other information considered pertinent. Individual briefing folders should be prepared for each aircrew and ground team.

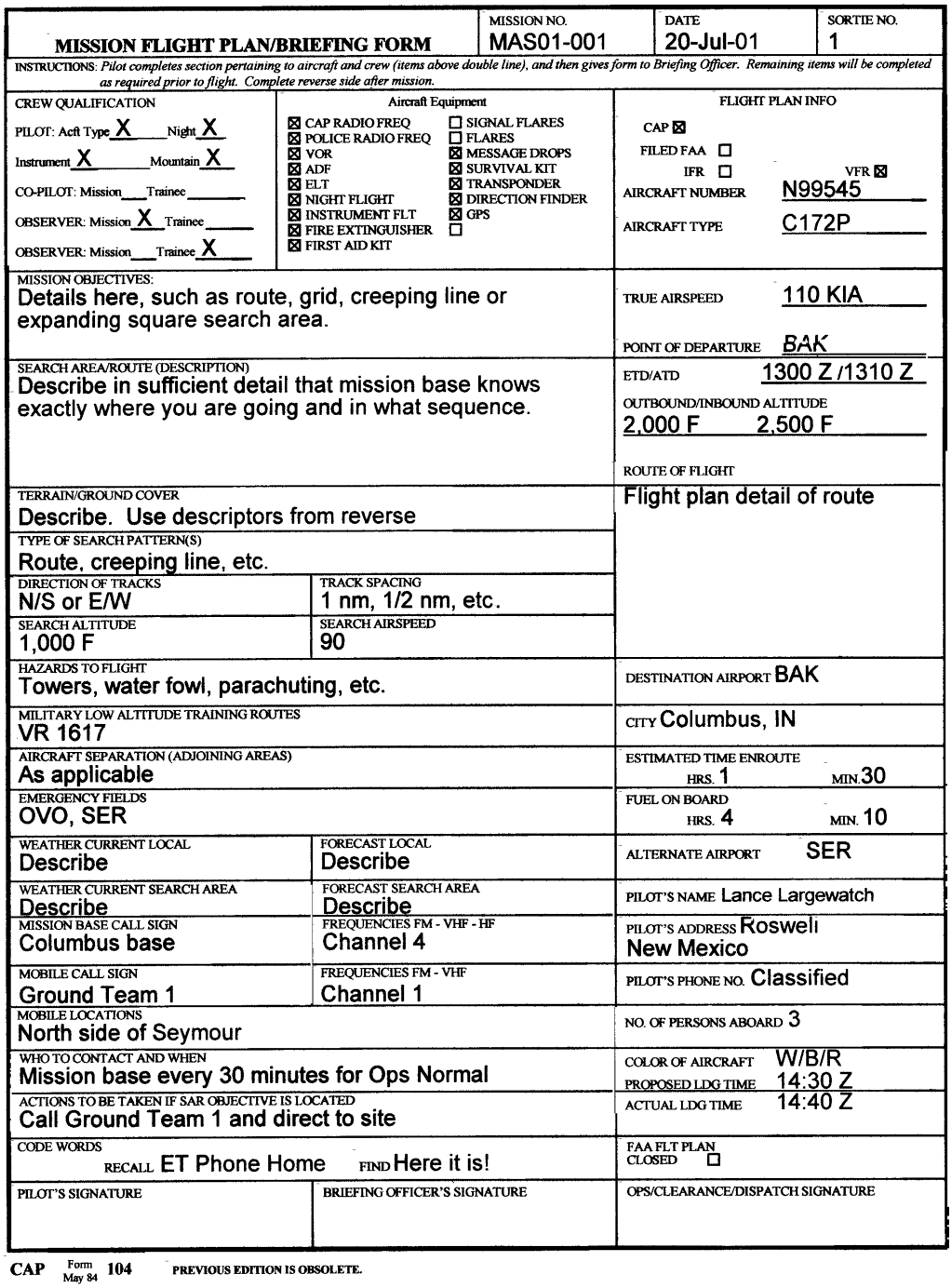
Depending on the circumstances, the mission pilot may receive the briefing or the entire aircrew may be briefed together. It is important that you pay attention and ask questions. In this briefing, there are no stupid questions.

Aircrew briefing kits should contain:

- CAPF 104, *Mission Flight Plan/Briefing*.
- CAPR 60-1, *CAP Flight Management*.
- Airport layout, taxi plan/procedures, emergency-landing areas.
- Appropriately gridded aeronautical sectional charts (should be prepared on a permanent basis).
- Current sectional charts must be used for navigation and obstruction clearance. These charts need not be gridded.
- Specialized briefing checklists (as applicable).

13.6 The Mission Flight Plan (CAPF 104, front)

A CAP flight plan and a sortie briefing form are required for each sortie flown by your aircrew. The front of the CAPF 104 (Figure 13-2) serves both purposes.



MISSION FLIGHT PLAN/BRIEFING FORM

MISSION NO.	DATE	SORTIE NO.
MAS01-001	20-Jul-01	1

INSTRUCTIONS: *Pilot completes section pertaining to aircraft and crew (items above double line), and then gives form to Briefing Officer. Remaining items will be completed as required prior to flight. Complete reverse side after mission.*

CREW QUALIFICATION

PILOT: Acft Type X Night X
Instrument X Mountain X
CO-PILOT: Mission ___ Trainee ___
OBSERVER: Mission X Trainee ___
OBSERVER: Mission ___ Trainee X

Aircraft Equipment

- ☒ CAP RADIO FREQ
- ☒ POLICE RADIO FREQ
- ☒ VOR
- ☒ ADF
- ☒ ELT
- ☒ NIGHT FLIGHT
- ☒ INSTRUMENT FLT
- ☒ FIRE EXTINGUISHER
- ☒ FIRST AID KIT
- ☐ SIGNAL FLARES
- ☐ FLARES
- ☒ MESSAGE DROPS
- ☒ SURVIVAL KIT
- ☒ TRANSPONDER
- ☒ DIRECTION FINDER
- ☒ GPS
- ☐

FLIGHT PLAN INFO

CAP ☒
FILED FAA ☐
IFR ☐ VFR ☒
AIRCRAFT NUMBER N99545
AIRCRAFT TYPE C172P

MISSION OBJECTIVES:
Details here, such as route, grid, creeping line or expanding square search area.

TRUE AIRSPEED 110 KIA
POINT OF DEPARTURE BAK

SEARCH AREA/ROUTE (DESCRIPTION)
Describe in sufficient detail that mission base knows exactly where you are going and in what sequence.

ETD/ATD 1300 Z /1310 Z
OUTBOUND/INBOUND ALTITUDE
2,000 F 2,500 F
ROUTE OF FLIGHT
Flight plan detail of route

TERRAIN/GROUND COVER
Describe. Use descriptors from reverse

TYPE OF SEARCH PATTERN(S)
Route, creeping line, etc.

DIRECTION OF TRACKS	TRACK SPACING
N/S or E/W	1 nm, 1/2 nm, etc.
SEARCH ALTITUDE	**SEARCH AIRSPEED**
1,000 F	90

HAZARDS TO FLIGHT
Towers, water fowl, parachuting, etc.

DESTINATION AIRPORT BAK

MILITARY LOW ALTITUDE TRAINING ROUTES
VR 1617

CITY Columbus, IN

AIRCRAFT SEPARATION (ADJOINING AREAS)
As applicable

ESTIMATED TIME ENROUTE
HRS. 1 MIN. 30

EMERGENCY FIELDS
OVO, SER

FUEL ON BOARD
HRS. 4 MIN. 10

WEATHER CURRENT LOCAL	FORECAST LOCAL
Describe	Describe

ALTERNATE AIRPORT SER

WEATHER CURRENT SEARCH AREA	FORECAST SEARCH AREA
Describe	Describe

PILOT'S NAME Lance Largewatch

MISSION BASE CALL SIGN	FREQUENCIES FM - VHF - HF
Columbus base	Channel 4

PILOT'S ADDRESS Roswell New Mexico

MOBILE CALL SIGN	FREQUENCIES FM - VHF
Ground Team 1	Channel 1

PILOT'S PHONE NO. Classified

MOBILE LOCATIONS
North side of Seymour

NO. OF PERSONS ABOARD 3

WHO TO CONTACT AND WHEN
Mission base every 30 minutes for Ops Normal

COLOR OF AIRCRAFT W/B/R
PROPOSED LDG TIME 14:30 Z
ACTUAL LDG TIME 14:40 Z

ACTIONS TO BE TAKEN IF SAR OBJECTIVE IS LOCATED
Call Ground Team 1 and direct to site

CODE WORDS
RECALL ET Phone Home FIND Here it is!

FAA FLT PLAN CLOSED ☐

PILOT'S SIGNATURE	BRIEFING OFFICER'S SIGNATURE	OPS/CLEARANCE/DISPATCH SIGNATURE

CAP Form May 84 104 PREVIOUS EDITION IS OBSOLETE.

Figure 13-2

13.6.1 CAP Flight Plan

The right side of the front of the CAPF 104 serves as the CAP flight plan. It lists details of your aircraft, your intended route of flight, anticipated flight time, fuel available versus fuel you intend to use, and souls on board -- all meant to facilitate rescue efforts in case of an emergency.

Your pilot must consider many things as she fills out the flight plan. Since the primary purpose of the plan is to let mission headquarters know where your aircraft is going and when it will return, the "Route of Flight" is the most important block on the flight plan. The "Estimated Time Enroute" is also very important; if a sortie isn't back within a reasonable time past this estimated time of return, mission base will attempt to contact you and a search may be started.

Also double-check your "Estimated Time Enroute" against your "Fuel Onboard." If the time enroute exceeds your fuel load *minus reserve* (e.g., a "round robin" sortie or extended sortie where you plan to refuel), ensure your "Route of Flight" thoroughly explains your intentions and lists your fuel stop.

13.6.2 CAP Briefing Form

The left side of the front of the CAPF 104 serves as the sortie briefing form. It lists mission objectives, describes the search area or route, defines terrain and ground cover (try to use the terminology from the POD chart on the bottom of the reverse side), gives details of the search pattern to be used, lists hazards to flight, defines current and forecast weather in the search area, and lists other mission details.

Be thorough and thoughtful as you fill out this form. It is very important.

No doubt your aircrew will hold an informal group briefing as you complete this form. Crew resource management demands prior agreement on details of the search.

13.7 Preparing to Leave on a Sortie

Once you have been briefed and the front of the CAPF 104 is complete and signed by the pilot, the briefing officer will sign the CAPF 104 and direct the pilot to air operations. Here, the chief or director will inform the crew of any changes and release the flight by signing the CAPF 104.

Now is the time for final preparations for the flight. The mission commander (usually the observer) will have you check your equipment and supplies (e.g., headset, charts, maps, plotter, log, checklists, camera, drinking fluids and snacks) and reviews flight line rules. The final visit to the restroom is made.

The pilot presents the CAPF 104 to the flight line supervisor for final release, and then begins the aircraft pre-flight. The observer should check the aircraft's mission-related equipment and supplies such as binoculars, charts and maps, flashlights, survival equipment, and airsick bags. All windows should be cleaned, if necessary. [If the sortie includes video imaging, the right-side window should be prepped for opening. Normally, removing one screw and putting it in a safe place is all that is necessary.]

Prior to each flight, the pilot-in-command will brief the crew. This briefing will include specific information concerning the aircraft such as how to use the seat belts and shoulder harnesses (both must be used at or below 1000' AGL), emergency exit/egress procedures including the order of emergency egress, the no smoking policy, the fuel management plan, and startup and taxi emergency procedures. Duties for each crewmember during the start up, taxi, takeoff, and transit phases of the flight will be assigned. The pilot should inform you when the "sterile cockpit" rules will be in effect. [When more than one flight is accomplished by the same crew during the day, subsequent briefings are not required to be so

detailed but must, at a minimum, highlight differences and changes from the original briefing.]

13.8 During the Sortie

The observer reads the aircraft start up checklist to the pilot, who responds to each checklist item. The observer normally performs a radio check with mission base. The pilot and observer share duties in setting up the communications and navigation equipment (this process may continue while taxiing). The pilot will then review crew duties for the taxi phase.

The sterile cockpit rules begin at this time; all unnecessary talk is suspended and collision avoidance becomes the priority of each crewmember. Sterile cockpit rules focus each crewmember on the duties at hand, namely concentrating on looking outside the aircraft for obstacles and other aircraft. The rules will be put into effect during the following phases of flight: taxi, takeoff, departure, approach, and landing.

Once the aircraft has taxied to the departure point, the pre-takeoff checks are completed and the pilot reviews the takeoff and departure assignments with the crew. *The sterile cockpit rules are still in force; all unnecessary talk is suspended and looking for traffic and obstacles becomes the priority of each crewmember.* The observer notes the time and the Hobbs reading at takeoff, and reports "wheels up" to mission base. The observer continues to read normal operations checklist items to the pilot.

Once clear of the airport/controlled airspace environs the crew settles into the transit phase. Depending on circumstances, the sterile cockpit rules are normally suspended at this time. Final preparations and duty assignments are made before entering the search area. *The observer maintains situational awareness at all times during the flight*.

When the aircraft enters its search area, the observer notes the time and the Hobbs reading and reports "entering the search area" to mission base. *At this time the observer's primary duty is that of a scanner*.

If necessary, the observer provides periodic "operations normal" reports to mission base and/or high bird. The observer should also inquire about fuel status at least once an hour, which will prompt the pilot to think about fuel burn assumptions versus actual conditions.

During the actual search or assessment, the aircrew must be completely honest with each other concerning their own condition and other factors affecting search effectiveness. If you missed something, or think you saw something, say so. If you have a question, ask.

If you spot the target, the most important thing to do is *notify mission base immediately*. The recovery must be started as soon as possible.

The observer should monitor the crew for fatigue and schedule breaks as necessary. She should also ensure that all crewmembers drink plenty of fluids to prevent dehydration.

13.9 Return from the Sortie

When the aircraft completes its mission and leaves the search area, the observer notes the time and the Hobbs reading and reports "leaving the search area" to mission base. The return transit begins.

At an appropriate distance from the mission base airport/controlled airspace the pilot will review crew assignments for the approach and landing phases of the flight. *The sterile cockpit rules begin; all unnecessary talk is suspended and looking for traffic and obstacles becomes the priority of each crewmember.* The observer begins reading normal operations checklist items to the pilot.

Upon landing, the observer notes the time and the Hobbs reading and reports "wheels down" to mission base. The observer reads after landing checklist items to the pilot. Each crewmember resumes taxi duties at this time and continues until the aircraft is parked and the engine is shut down. *The sterile cockpit rules are still in force; all unnecessary talk is suspended and collision avoidance becomes the priority of each crewmember.*

Once the aircraft is properly secured, the aircrew should remove any trash from the aircraft and clean the leading edges and windows as necessary (i.e., get the aircraft ready for the next sortie). Arrange for refueling, if necessary.

After a short break the crew will assemble to complete the CAPF 104 and prepare for debriefing. Any drawings or markings made on charts or maps should be transferred onto the CAPF 104 or attached to it. Make sure everything is clear and legible.

NOTE: *The two most common entries overlooked* when completing the CAP flight plan (front side of the CAPF 104) are "*ATD*" (actual time of departure) and "*Actual LDG Time*."

13.10 Aircrew Debriefing

During the briefing everything that is known about the mission was passed along to the air and ground teams. In the debriefing, the reverse is true. Each search team (air and ground) tells how it did its job and what it saw. This type of information is given in detail and is in the form of answers to specific questions asked by the debriefer. The information is then passed on the planning section for analysis, and the information may then be passed on, in turn, to departing search crews.

An aircrew or ground team cannot search and have "negative results". Even if the objective is not located, important information can be obtained, such as weather, turbulence, ground cover, and false clues.

The debriefer uses the information you filled in on the reverse side of the CAPF 104 as a starting point for the debriefing. For example, more information on search area and weather conditions may be needed, and you should be ready to volunteer your observations. Perhaps you noticed an increase in cloud shadows. Perhaps visibility seemed to deteriorate because of the haze that developed after you arrived in the search area. Perhaps turbulence developed during the last one-third of your grid search. Any number of weather or personal factors could have changed during your sortie. To make the best contribution to the debriefing requires that you remember these changes and be prepared to tell the debriefer about them.

Did you make any changes to the planned search procedure? The debriefer's primary concern is to determine adequate search coverage. If, for example, you diverted frequently to examine clues, there is a good possibility that search coverage was not adequate and that another sorties is justified. If you become excessively tired and rested your eyes frequently, tell the debriefer. Everyone understands the degree of fatigue a scanner can experience. But, frequent rest-eye periods will reduce the level of good scanning coverage, and also could be justification for another sortie.

What types of clues did you investigate? Perhaps a clue seemed to be insignificant and you decided not to pursue it. Describe any clues that were investigated and found to be false. This information becomes part of the briefing for other aircrews because it can keep them from pursuing the same false clues.

Debriefing results are provided to the operations staff and incident commander, periodically or whenever significant items are evident. At the end of each operational period, the incident commander and staff will review the debriefing forms to develop the complete search picture, compute probabilities of detection and cumulative POD, and then determine priorities and make plans for the next operational period.

When the debriefer is satisfied that pertinent information has been discussed and explained, you will be dismissed. Now what should you do? Obviously, you will need rest. If you are scheduled for another sortie, find someplace to rest. Close your eyes; you may even want to take a nap if there is time and a place to do so. Also, take in some refreshment to give you sufficient energy for the next sortie.

The mission will be closed when the search objective is located or when suspended by higher authority. At this time mission personnel will return home. If the search objective has not been found and the mission is suspended, it may be reopened if additional clues are received.

13.11 The Mission Debriefing Form (CAPF 104, reverse)

The reverse side of the CAPF 104 (Figure 13-3) contains your observations and comments regarding your search and your assessment of search effectiveness.

Form
May 84

MISSION DEBRIEFING FORM

TYPE OF SEARCH: Visual: X Electronic:	SEARCH PATTERNS USED: Track Crawl (route)			
SEARCH VISIBILITY: *(Distance you can see an auto clearly)* 1 NM		SEARCH ALTITUDE: *(Above ground)* 1000 AGL	SEARCH SPEED: 90 Kts	TRACK SPACING: 0.0 NM
SECTIONAL GIRDS SEARCHED: *(Lat/Long)*	N W ABCD	N W ABCD	N W ABCD	N W ABCD
SEARCHED: Route/ Electronically	BAK	to SER	to	to
TIME OF DAY: 13:10 Z to 14:40 Z	Crew Comments about Effectiveness Exec ___ Good ___ Fair X Poor			
OBSERVERS/ SCANNERS: Number 2	Crew Remarks of SAR Effectiveness Route was easy to follow, but haze reduced contrast and washed out colors			

TERRAIN: Flat X	Rolling Hills ___	Rugged Hills ___	Mtns ___	TURBULENCE: Light: ___	Mod ___	Heavy ___
COVER: Open X	Moderate ___	Heavy ___	Light Snow ___	Deep Snow ___		
COORDINATES OF SIGHTINGS: *(Lat/Long)*	N W	N W	N W	N W	VOR Radials	
FLYING TIME: Enroute. *(To/From Grid)* 0.4 Hrs	Search Time *(In Grid)* 1.1 Hrs	Total 1.5 Hrs				

NOTE: If part of a grid was searched, draw area covered below in relation to landmarks. Indicate sightings.

No sightings.

Also use for drawings or sketches, and to list attachments.

OPEN, FLAT TERRAIN				
SEARCH ALTITUDE (AGL) / Track Spacing	SEARCH VISIBILITY 1 mi	2 mi	3 mi	4 mi
500 Ft				
.5 mi	35%	60%	75%	75%
1.0	20	35	50	50
1.5	15	25	35	40
2.0	10	20	30	30
700 Ft				
.5 mi	40%	60%	75%	80%
1.0	20	35	50	55
1.5	15	25	40	40
2.0	10	20	30	35
1000 Ft				
.5 mi	40%	65%	80%	58%
1.0	25	40	55	60
1.5	15	30	40	45
2.0	15	20	30	35

MODERATE TREE COVER AND/OR HILLY				
SEARCH ALTITUDE (AGL) / Track Spacing	SEARCH VISIBILITY 1 mi	2 mi	3 mi	4 mi
500 Ft				
.5 mi	20%	35%	50%	50%
1.0	10	20	30	30
1.5	5	15	20	20
2.0	5	10	15	15
700 Ft				
.5 mi	20%	35%	50%	55%
1.0	10	20	30	35
1.5	10	15	20	25
2.0	5	10	15	20
1000 Ft				
.5 mi	25%	40%	55%	60%
1.0	15	20	30	35
1.5	10	15	20	25
2.0	5	10	15	20

HEAVY TREE COVER AND OR VERY HILLY				
SEARCH ALTITUDE (AGL) / Track Spacing	SEARCH VISIBILITY 1 mi	2 mi	3 mi	4 mi
500 Ft				
.5 mi	10%	20%	30%	30%
1.0	5	10	15	15
1.5	5	5	10	15
2.0	5	5	10	10
700 Ft				
.5 mi	10%	30%	30%	35%
1.0	5	10	15	20
1.5	5	5	10	15
2.0	5	5	10	10
1000 Ft				
.5 mi	15%	20%	30%	35%
1.0	5	10	15	20
1.5	5	10	10	15
2.0	5	5	10	10

CAP 104 Reverse

Figure 13-3

Most of the information required on the reverse of the debriefing form is self-explanatory and serves to emphasize the need to take good notes during the sortie (e.g., the observer log). The "Time of Day" section requires you to enter the time you were in the search area; this helps debriefers and planners to determine if the weather or the sun's position affected search effectiveness. The "Flying Time" section requires you to insert transit time [(Enroute (to/from grid)], the time you spent actually searching or assessing [Search Time (in grid)], and the "Total" time. These times are easily determined if you noted your takeoff, in search area,

out of search area, and landing times and Hobbs readings in your log. The total time should correspond to the Hobbs time that is recorded in your aircraft flight log (e.g., a Hobbs time of 2.4 corresponds to 2 hours and 24 minutes).

Two items are of utmost importance -- "Crew Comments about Effectiveness" and "Crew Remarks of SAR Effectiveness":

- The first involves a quantitative assessment (excellent, good, fair or poor) of how well you accomplished your mission. Factors affecting search visibility (e.g., visibility, lighting, and sun position) and the crew (e.g., turbulence, fatigue, and how well the pilot covered the area) must be considered. Planners take these comments into consideration when determining POD, so *it is vital that you give the mission staff your honest input*!
- The second gives the crew a chance to comment on the effectiveness of the sortie in general. Were north/south tracks appropriate, or would east/west be better? Was one-mile track spacing adequate, or was the terrain so broken that half-mile spacing would be better? Were you at the optimal search altitude? Did the terrain you were briefed to expect match what you saw? Was the sortie too long or too short, and should a rest break have been included in the flight planning? These are just a few of the things that aircrews can comment upon. Planners use this feedback to improve POD, so *it is vital that you give the mission staff your honest input*.

Finally, there is a large blank section labeled "NOTE" for you to insert drawings, sketches and other supporting information. If necessary, you can also use this space for additional comments. If you are attaching a drawing or other information to the CAPF 104, state something like "drawing attached" in this space. Be sure to label the attachment so it can be related to the CAPF 104 if it accidentally becomes separated (e.g., mission and sortie number).

Finally, check that you entered your actual time of departure (ATD) and actual landing time on the front of the CAPF 104.

13.12 End of the Mission and the Return Home

If you will be flying more sorties, the process begins again. However, if the mission is complete (or suspended) you must prepare to depart the mission base and return to your home base.

It is important to realize that SAR personnel can experience post-traumatic stress. Look for signs of stress in yourself and in your team members. Specialized counselors are often available upon request to help your team members with their emotional needs. Refer to CAPR 60-5, *Critical Incident Stress Management*.

Turn in any equipment that you may have been issued (make sure the person you give the equipment or supplies to marks the items as turned in). Make sure that you have settled all outstanding fuel, food and lodging bills. Ensure that you have all the records that you may need for local or personal reasons, such as fuel tickets (for the CAPF 108) and copies of your CAPF 104s.

The pilot will plan the trip home and file a FAA Flight Plan. You must complete an "Outbound" CAPF 104 and obtain a CAP flight release, either from the mission staff and/or your local FRO.

When you leave mission base it is important to maintain crew discipline. You may be tempted to "let your guard down" now that the mission is over, but this is a mistake. Crew duties should still be assigned and understood, and the sterile cockpit rules should still be enforced where appropriate.

When you arrive at home base, secure and fuel the aircraft, close your FAA Flight Plan, call your FRO (if appropriate), and complete the outbound CAPF 104. Make sure that you have removed all personal items from the aircraft. You should clean the aircraft (especially the windows) so that it will be ready for the next flight.

The only thing left to complete is the CAPF 108. Before dismissing the crew, the person responsible for filing for reimbursement must make sure they have all the information and paperwork they need.

Remember that the mission isn't over until all crewmembers have arrived at their own homes safely! Normally, the pilot is responsible for calling mission base with the time (Hobbs) from the outbound CAPF 104; this should not be done until he knows that everyone is home.

Finally, the crew should brief their squadron on the lessons learned from the mission at the next opportunity. This provides valuable information to your fellow aircrew members and is an excellent opportunity to get in some quality "hanger talk."

13.13 Conduct Local Exercises

As you have learned during this course, your ability to perform at a high level depends upon knowledge, skill and proficiency. Therefore, you must practice and then practice some more.

CAP wings put on several practice exercises each year, but any individual can usually only attend one or two of these. So what do you do to get your initial task and 'exercise participation' signatures on your 101T? What can you do to maintain and improve your *mission* skills?

One answer is to stage un-funded exercises or drills at the squadron (or group) level. These can range in scope from a simple "table-top" exercise to a coordinated exercise involving two or three aircraft, a couple of ground teams, radio operators and a basic mission staff.

"Un-funded? No funding? You mean *I* pay?" Yeah, but let's take a look at this. The cost of local area training for ground teams and mission base personnel is very small (primarily gas, oil, coffee and donuts). As for aircrews, most people think this training is expensive; but a closer look shows that this is not the case. Assume a C172 that burns 10 gallons per hour, 100LL costing $2.50 per gallon, and a maintenance rate (what you pay to wing) of $20.00 per hour: this works out to a 'wet' rate of $45.00 per hour (many squadron aircraft costs are lower). With three crewmembers splitting the cost, this comes to *$15.00 for one hour's training* in the aircraft! Where else can you fly for this little? Also, you won't be spending as much on your training day for coffee and sodas 'cause you'll be flying -- an extra savings.

Another benefit to local exercises is that *the training is concentrated*. By this we mean that you can quickly and easily design a lot of tasks into a single sortie, thus increasing efficiency and holding down costs. With CAP's task-based training syllabi, the tasks you need to train or practice are already developed; all you need to do is combine the tasks into scenarios for local use. This allows you

to minimize transit times and perform multiple tasks for several people in an hour's time.

For example, a simple practice beacon search allows an aircrew to DF to the beacon, coordinate with a ground (or urban DF) team to lead them to the beacon, and lets the ground team DF to the beacon. While the ground team is working, the aircrew can then practice other DF methods and and/or work on other tasks. Mission staff members also accomplish tasks, particularly radio operators, flight line personnel, safety officer, and planning and operations staff.

It is important to run these exercises like you would an actual mission. Checks credentials and uniforms and use all required forms; this way, members maintain familiarity with required paperwork, regulations and procedures.

It is also important that trainers and evaluators are certified to sign off student's 101T cards. Qualified evaluators are those that are current and qualified in the same operational specialty area or higher, and have completed emergency services Skills Evaluator Training (SET) and are currently certified by their wing or region. Refer to CAPR 60-3, *CAP Emergency Services Training and Operational Missions*, Section 2-2 for details.

The mission symbol would be either C1 or B12, depending on the circumstances of the pilot-in-command. Also, you need to ensure that the person signing off completion of tasks and exercise participation is qualified to do so.

It is important that you go through your chain-of-command; especially the first time you host a local exercise. Group and wing commanders need to know you have plans for their resources and personnel, even if it's just to get it onto the wing calendar. Many wings will require you to develop and submit an operations plan for these exercises, even though they are un-funded (check with your wing chief-of-staff). This is easy since you just need to develop a generic plan once and then change the dates and times as necessary. If you are required to submit a CAPF 10, just fill it out for $0.00.

The first exercise you host will be a learning experience, so plan for this and learn from your mistakes. After your have it down, invite others (you don't want to keep all the fun to yourselves)!